Sending the Correct Signals: Positive Incentives and the Environment

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INDEPENDENT economic researchers

Overview

- A Framework for Considering Market-based Instruments to Support Environmental Fiscal Reform in South Africa (including what incentives are available and commonly used)
- Fiscal incentives specifically for biodiversity conservation in South Africa
- The Working for Water programme: its evolution and new directions using innovative financing through Payments for Ecosystem Services models

Framework for Considering Market-based Instruments to Support Environmental Fiscal Reform in South Africa

Recognising their potential, in 2003 National Treasury started process of investigating market-based instruments in support of environmental goals

Culminated in a 2006 Draft Policy Paper entitled: *"A Framework for Considering Market-based Instruments to Support Environmental Fiscal Reform in South Africa"*

This paper was discussed with stakeholders and key options analysed further to set priorities for implementation which is currently ongoing

Policy Paper can be downloaded from:
http://www.treasury.gov.za/public%20comments/Draft%20Environmental%20Fiscal%20Reform%20Policy%20Paper%206%20April%202006.pdf

Background - typical options considered in the policy paper to correct for negative environmental outcomes

Using markets (*using existing prices*)	**Creating markets** (*forming new markets and marketable goods*)	**Environmental regulations**	**Engaging civil society**
Elimination of perverse subsidies; Environmentally-related taxes; Deposit-refund systems; User charges; and Targeted subsidies	Property rights and decentralisation; Tradable Permits and rights; and International offset systems	Product and process standards; Bans / prohibitions; Non-tradable permits and quotas; Zoning; and Liability and performance bonds	Public participation; Information disclosure; and Voluntary agreements

Key proposals generated by the policy paper for further investigation and prioritisation

Proposal	Environmental objective
Increase the Water Resource Management Charge component of water prices	Manage water use & reinvest funds in land management in critical catchments and associated ecosystems
Carbon emission tax on fossil fuels (incl. coal)	Mitigate long term climate change, and generate revenue for other proposals
Remove VAT zero rating on artificial farm inputs, specifically fertilizers and non-organic pesticides, consider additional levies	Reduce eutrophication, nutrient concentration and ecosystem damage and assist in building sustainable agricultural soils
Consider levies on products or substances resulting in persistent pollutants, esp organic toxins	Reduce persistent organic pollutants in food chains and burden on apex species
Make investment, rehabilitation in threatened ecosystems, deductible from income tax	Conserve critical ecosystems and attendant services and species, and comply with international treaties
Exempt statutorily protected nature reserves from Transfer & Estate duties, Donations & Capital Gains Tax	Promote investment in the creation and management of protected areas that contribute to the national heritage estate
Use the national framework for property rates exemptions and rebates to encourage stewardship, and rehabilitation in priority areas	Encourage sound land management, invasive species control, fire preparedness and development in non-sensitive areas
Allow provincial programmes to provide funds to landowners and conservation agencies for works in priority areas	Directly address priority land management needs such as wetland rehabilitation, invasive species control and river bank protection

Key messages from the policy paper

1. Market-based instruments, particularly environmentally-related taxes and charges, have certain advantages over traditional regulatory (command-and-control) approaches and may be a more efficient way to address certain environmental concerns whilst also contributing to fiscal objectives; - not a panacea.

2. A coherent framework is needed to consider and evaluate the use of market based instruments;

3. The development of environmentally-related tax proposals must be undertaken according to a specific set of criteria and should, as far as possible, be adequately integrated into existing government policies;

4. Earmarking revenues from environmentally-related taxes is not in line with sound fiscal management practices and proposals for earmarking need to be evaluated on a case-by-case basis.

Progress thus far with implementation of policy paper measures

- Measures already implemented include:
  - Increasing the Water Resource Management Charge component of water prices
  - Making investment, rehabilitation in threatened ecosystems, deductible from income tax (case study to follow on these measures)

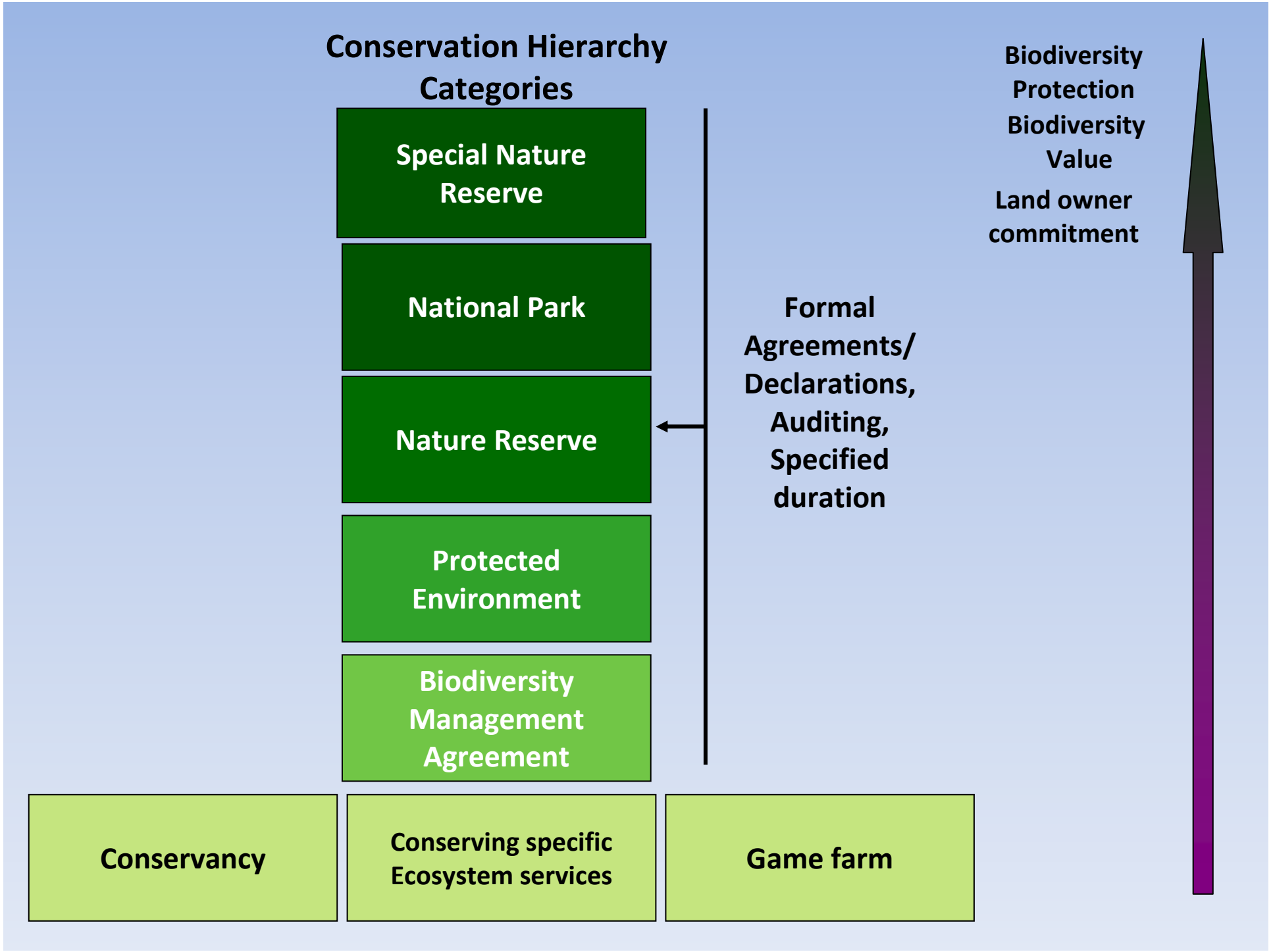
- Measures under development include:
  - Carbon emissions tax on fossil fuels (incl. coal)

- Which measures are actually implemented have a lot to do with potential economic impacts, political acceptability, strength of interest groups, presence of 'champions' for a cause, etc.

Fiscal Incentives for Biodiversity Conservation in South Africa:

Brief overview of what we have…and possibly where we could be going

SANBI
Biodiversity for Life


Conservation Hierarchy Categories
Special Nature Reserve
National Park
Nature Reserve
Protected Environment
Biodiversity Management Agreement
Formal Agreements/ Declarations, Auditing, Specified duration
Biodiversity Protection
Biodiversity Value
Land owner commitment
Conservancy
Conserving specific Ecosystem services
Game farm

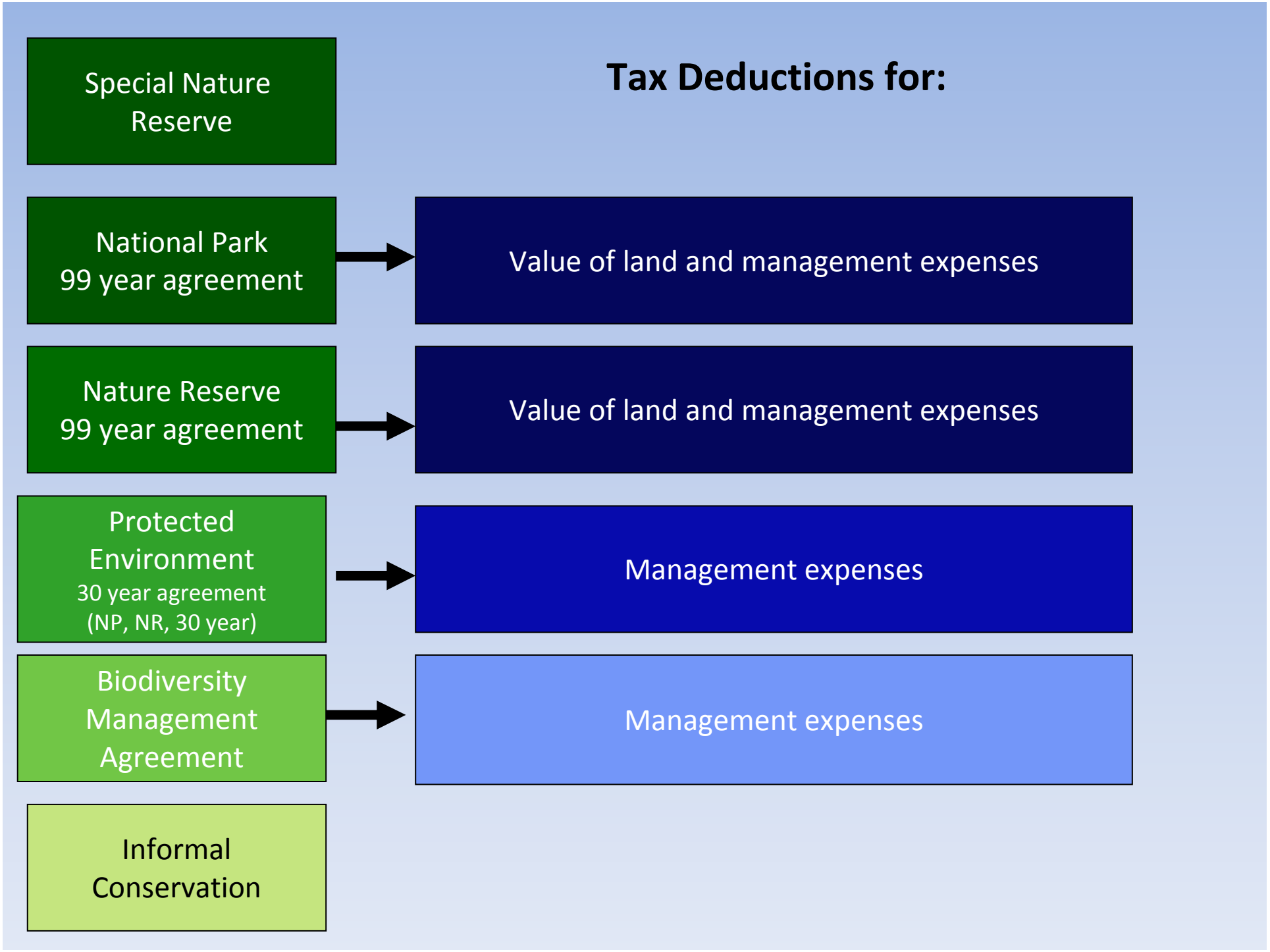
Fiscal incentives needs

Needed fiscal incentives that:

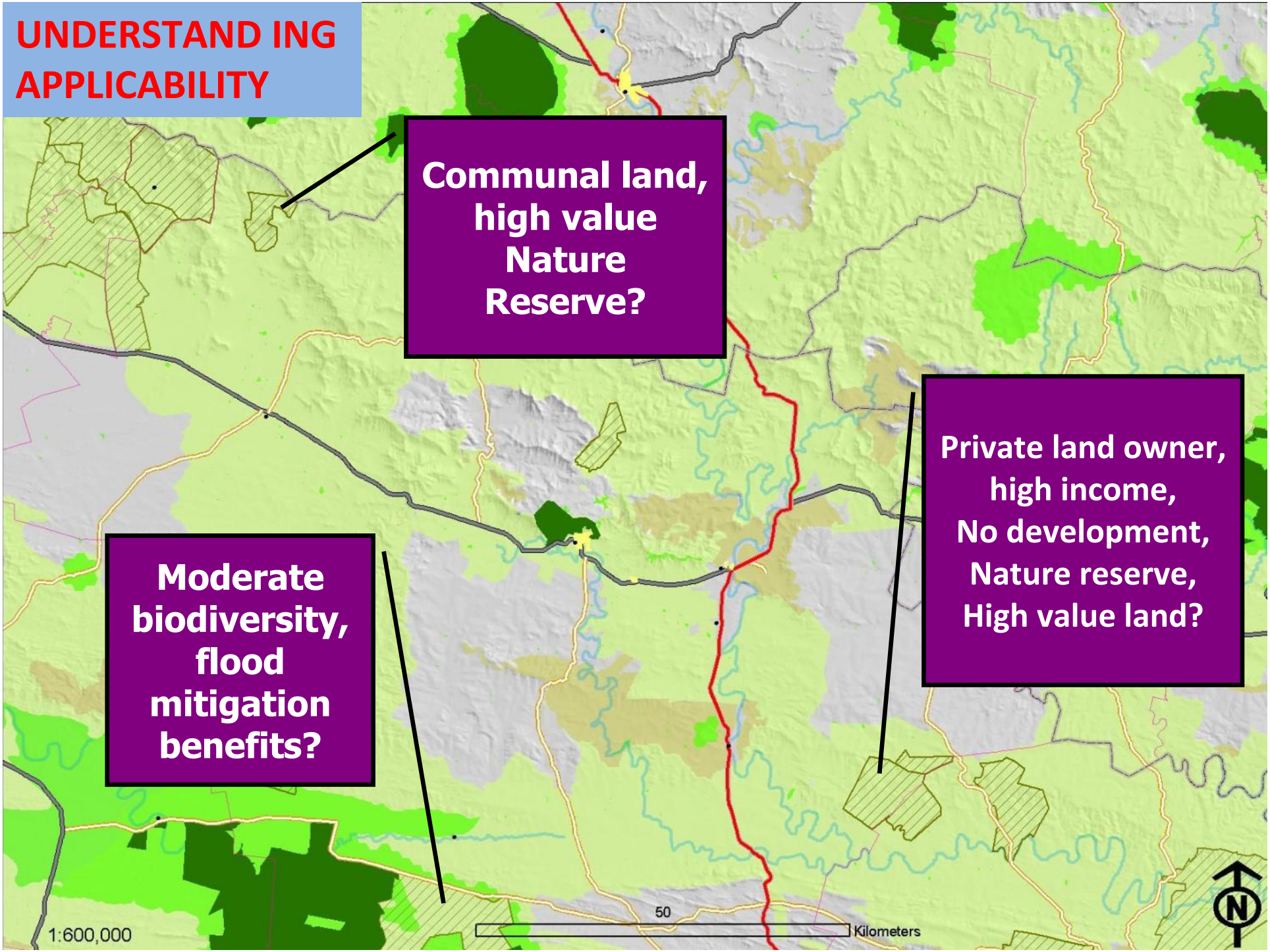
- Match the conservation hierarchy
- Appeal to a wide range of landowners

Income Tax Deductions Introduced

- Linked to formal conservation agreements
- Match the hierarchy of conservation options
- Deductions for expenses incurred by land owner to conserve or maintain the land
- Deductions based on the value of the land over ten years


Tax Deductions for:
Special Nature Reserve
National Park 99 year agreement
Value of land and management expenses
Nature Reserve 99 year agreement
Value of land and management expenses
Protected Environment
30 year agreement
(NP, NR, 30 year)
Management expenses
Biodiversity Management Agreement
Management expenses
Informal Conservation

UNDERSTAND ING APPLICABILITY



Some other ideas and potential options…

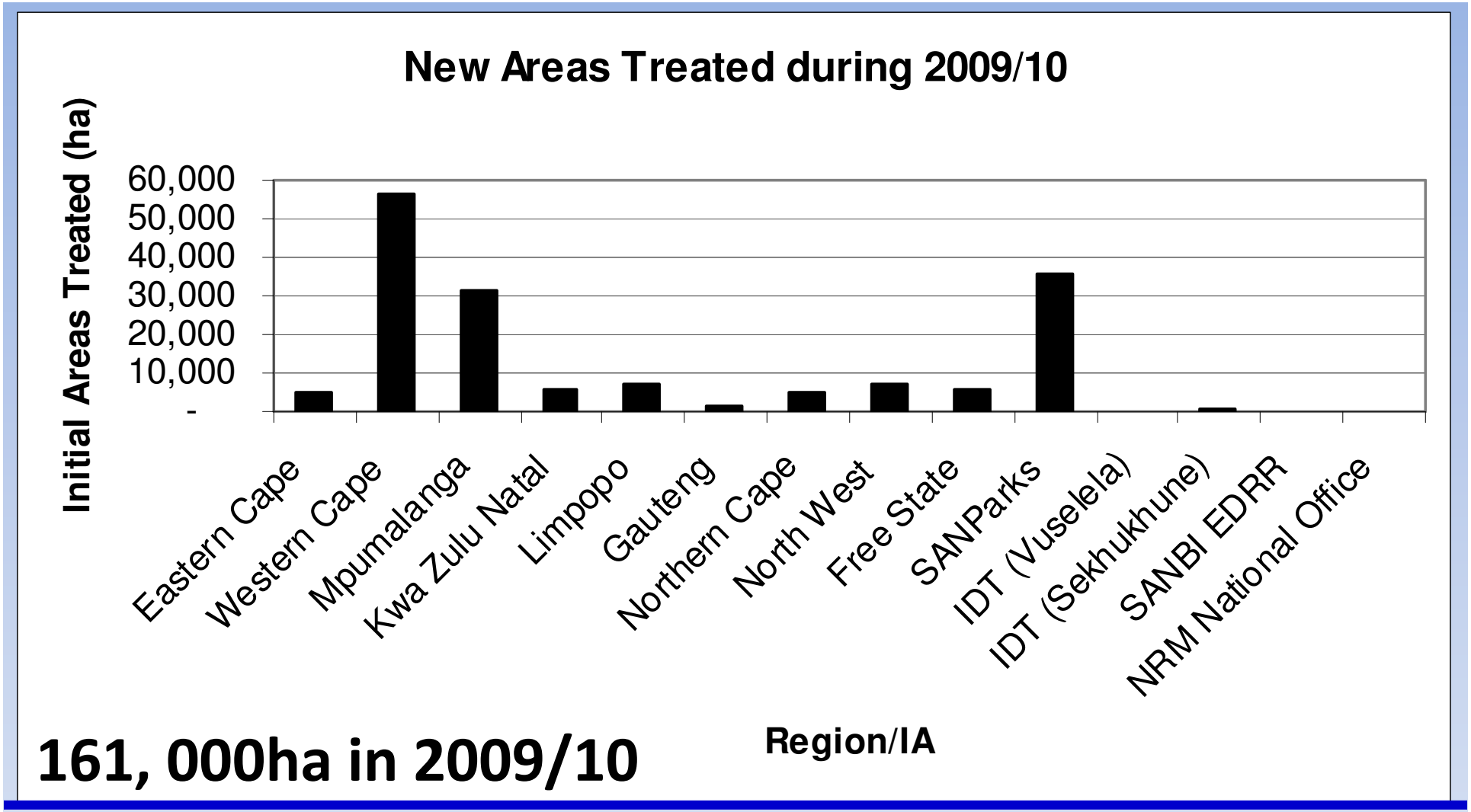
- Adjusting local property rates policies to incentivise conservation at a local government level
- Payments for Ecosystem Services
- Direct government funding from municipal infrastructure grant sources for ‘Ecological Infrastructure’?

Lessons from the Working for Water (WfW) programme

- Overview of :
  - The history of the programme
  - Its expansion and evolution over time
  - New funding models being tested focused on Payments for Ecosystem Services (PES)

In the beginning...

- In 1995 invasive alien plant management included as a programme in the South African Reconstruction and Development Programme.
- Initially job creation was a major motivation or ‘selling point’
- Other key benefits:
  - Improved water security
  - Improved biodiversity and ecosystem function/natural processes
  - Improved productive potential of land
- Based on sound research and with monitoring of water and ecological outcomes
- Programme coincided with introduction of laws and awareness campaigns at national and local level to counter spread of alien invasive plants

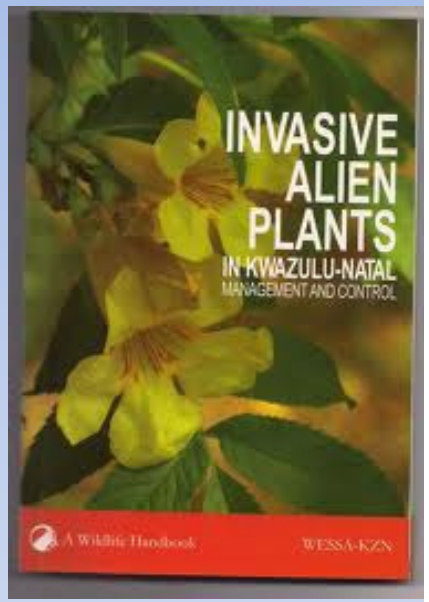


161, 000ha in 2009/10

In total more than 1.9 million hectares treated and followed up since 1995

Costs to deliver services

- Grew from a programme of R25 million a year to R695 million(US$133 million) a year! (and it is still not enough)
- More than 26,000 beneficiaries/workers in Working for Water.
- In addition, WfW was the catalyst for the Natural Resource Management Programme which includes:
  - Working for Land (budget ±R32 million)
  - Working on Fire (budget ±R223 million)
  - Working for Wetlands (budget ±R75 million)



Funding models for the programme

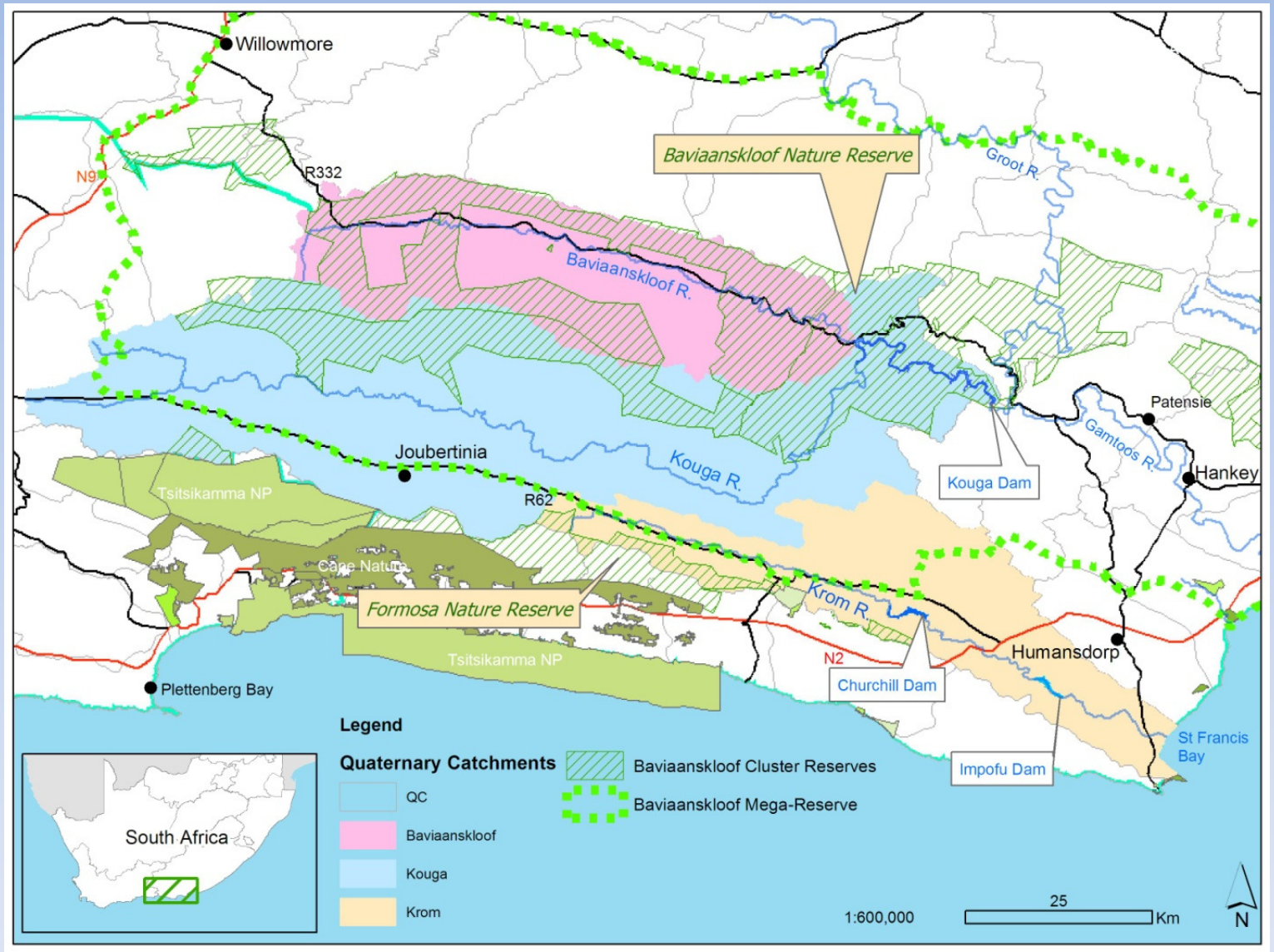
- Current funding occurs through government grants for alien vegetation clearing and restoration on public and private lands
- Funding levels are still inadequate so new approaches and models are being investigated
- Grant funding needs to remain, but Payments for Ecosystem Services (PES) models are being assessed and piloted
  - These systems essentially offer the opportunity to achieve sustainable outcomes by adjusting the incentives faced by land owners to better meet the needs of wider society.
- A key to creating an enabling environment for PES is to change the National Water Resources Strategy and Water Pricing Strategy to allow for charges that can directly fund alien clearing and restoration in a PES system

BAVIAANSKLOOF - TSITSIKAMMA PAYMENT FOR ECOSYSTEM SERVICES: A FEASIBILITY ASSESSMENT

Patron in Chief:
Nelson Mandela

1930’s onwards: large-scale degradation of thicket by goat farming

The study area



High potential for restoration and management to deliver ecosystem services

- The Baviaanskloof and Kouga currently supply some 101 million m^3 of water to users while the Kromme supplies some 37 million m^3.
- The spekboom thicket has a prodigious capacity to store carbon.
- 65% is made up of extensive farm land – three quarters of this land is degraded primarily through overgrazing by goats.
- Approximately 28,000 hectares is condensed alien invasive plant thicket.

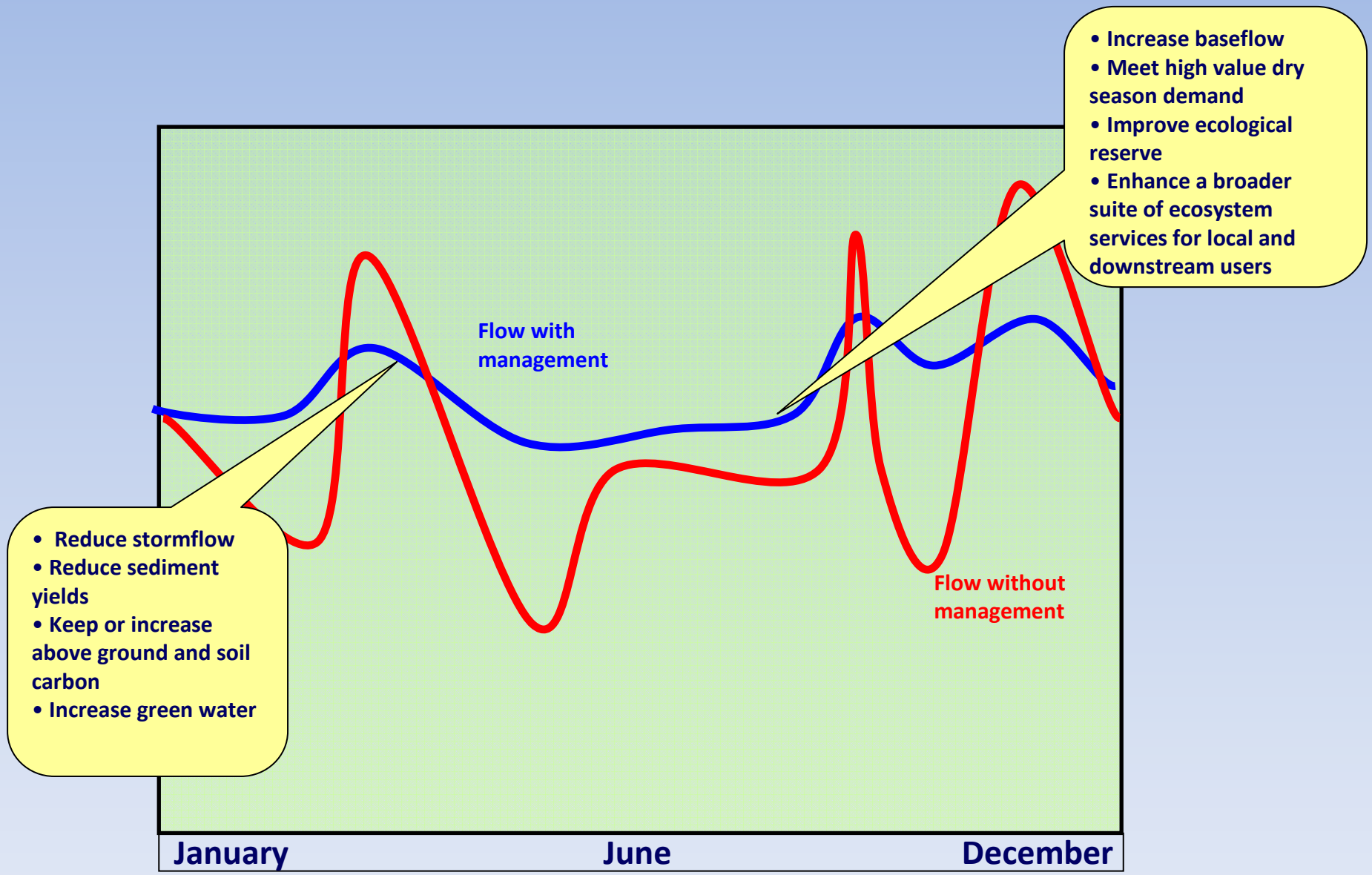
Demand from landowners to shift to more sustainable land uses

- Current livestock practices are not sustainable and generate poor returns – as the extent of large scale veld degradation attests
- Farmers are looking for more sustainable land uses with better returns, such as game farming, tourism and intensive cropping.
- The area is severely water stressed and nearby towns, cities often require restrictions
- The need to optimise the use of existing catchment land is growing daily and should be viewed as an economic development imperative.

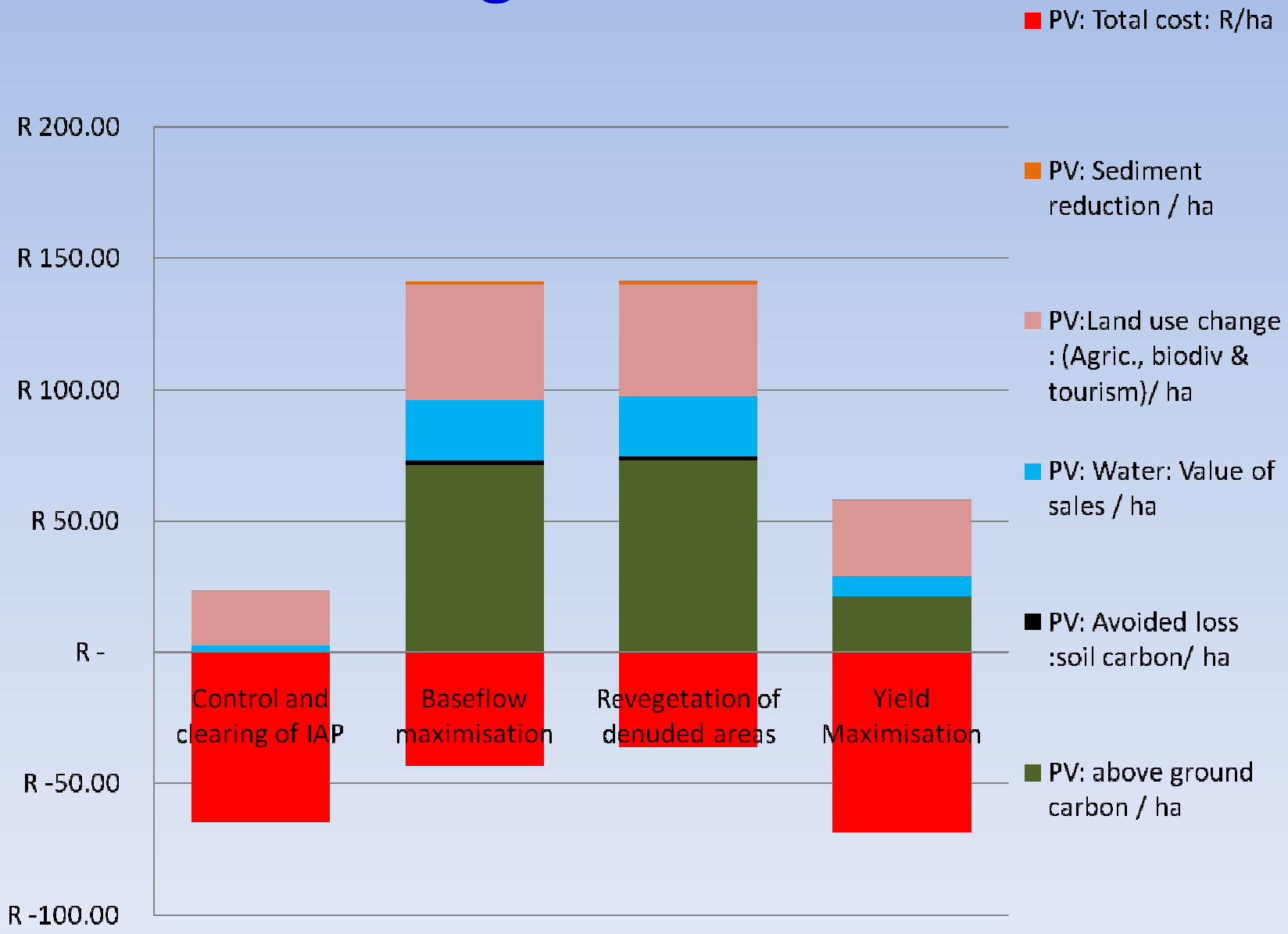
Approach

- Financial and economic cost-benefit analysis applied
- Constructed GIS-based hydrological model to quantify the links between vegetation cover / land use changes and hydrological outcomes
- Integrated implementation/management costs into the model.
- Calculated the potential value of the various water services to potential buyers. Added carbon sequestration services to these.
- Compared implementation and opportunity costs to benefits to get indication of feasibility/viability
  - At the farm level focused on financial returns/incentives to farmers
  - At the societal level focused on wider economic benefits

Results show that effective vegetation management can make a significant impact on water related ecosystem services



Annual returns per hectare for restoration and management on farms



Implications for farmers

- It is financially feasible to change from stock farming which is not sustainable to a multiple service focus, which includes:
  - reduced but sustainable stocking rates,
  - vegetation restoration and management to generate carbon sequestration, wildlife habitat, tourism assets, sedimentation avoidance, avoided soil carbon loss and increased water security
- But, this depends on access to a market(s) primarily for water and carbon sequestration services

Implications for water managers

- Water consumers have an alternative or additional mechanism to support water security.
- The ‘new’ water may be useful for meeting the environmental flows of the rivers if the assurance of supply is considered too low.
- The findings of the study indicate that water management programmes, such as Working for Water, could be substantially bolstered if their approach was broadened to include PES components.

Implications for government

- The Baviaanskloof-Tsitiskamma watersheds house natural assets with high value to all levels of government:
  - A critical water resource for the local municipalities,
  - An outstanding tourism asset to attract national and international visitors,
  - A flood reduction service particularly for district, provincial, and national roads,
  - A basis for the revival and diversification of the district's rural economies,
  - An option for augmenting water security for the local municipality, and for enhancing the longevity of existing water infrastructure,
  - A World Heritage Site which offers prestige, but also responsibilities.
- Loss of these assets will have large and significant costs for government – already illustrated by regional flood damage repairs and water shortages.

Thank you!

Working for Water slides provided by Christo Marais
Fiscal incentives for conservation slides provided by Tracey Cumming
Baviaanskloof PES study slide provided by Myles Mander

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